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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,793	09/29/2000	Daniel M. Barich	47440-027	8604

7590 03/01/2004

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EXAMINER	
GARBER, CHARLES D	

ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/672,793	BARICH ET AL.	
	Examiner	Art Unit	
	Charles D. Garber	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 11/10/2003.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-17 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-14,17 and 20* is/are rejected.

7)☒ Claim(s) *15 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments, see amendment, filed 11/10/2003, with respect to the rejection(s)of claim(s) 1, 4-17 and 20 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Cornett et al. (US005216612A).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCasland (U.S. Patent 5,856,931) in view of Cornett et al. (US Patent 5,216,612).

McCasland discloses inspection method and system (title) for trucks (column 1, line 55), manufacturing machines (column 2 line 32), roller coasters, and railroad tanker cars (column 3 lines 3-4). The inspection requirements are based on reliability centered maintenance (RCM) analyses (column 2 lines 33-38) which predict optimum maintenance task intervals based on continually updated past performance and failure. The method and system includes a portable device used to direct users to various inspection points on various machines (column 6 lines 19-25). The reference to various machines with various elements is specifically given by way of example only and the reference makes clear that inspection of other types of equipment such as trucks and railroad cars is included in the scope of the invention. The figures 2-5 illustrates a method directing the user to specific assets such as machines A, B and C and to peculiar inspection points on each machine. The hierarchical structure of various inspection points on various assets is maintained in a database. This in combination with the process of directing the user to these assets is substantively equivalent to the instant invention process of selecting from an instruction set a list of one or more sites to be inspected for the identified asset or specifically vehicle as in the instant invention.

As McCasland addresses rail tank cars in general this encompasses all types of rail cars including tank cars and regulated and non-regulated cars. McCasland however does not teach selecting an item of equipment for inspection based on its regulated and non-regulated classification. Nevertheless, Examiner takes Official Notice that it is widely known to differentiate inspection processes

based on peculiar government requirements and one of ordinary skill in the art would have known to select a car by this classification as government inspection requirements apply on the basis of this classification. Non-regulated cars obviously do not require government mandated inspections and regulated cars do. One of ordinary skill would withhold government mandated inspections intended only for regulated cars from non-regulated cars in order to save maintenance personnel the unnecessary effort.

McCasland also discloses that once an optimized "inspection route" or list of specific inspection points by asset is determined the invention provides direction to the user and instructions for tasks relative to each inspection point (column 3 lines 39-42). This is considered substantively equivalent to inspection each of the listed sites in accord with the instructions set forth for each of the listed sites in the instruction set as in the instant invention.

McCasland also discloses the user records activities or information by using the portable device (column 3 lines 55-58), a module 503 records all tasks performed, which equipment was inspection, which equipment was flagged for further attention along with quantity of products used to perform inspection, a module 505 which takes this information for failure tracking and analysis (column 7 line 33 to column 8 line 4). This is considered substantively equivalent to recording data derived from implementation of the inspections conducted at each of the list of sites as in the instant invention.

Though McCasland does not expressly recite the method includes requalification Examiner takes Official Notice that service requalification is widely

known RCM and it would have been obvious to one having ordinary skill in the art that once an inspection is successfully carried out an element with no adverse indications would be qualified to advantageously remain in service until the next inspection.

McCasland does not expressly teach aligning various inspection requirements.

Cornett teaches grouping maintenance activities in order to minimize lost production time (abstract). Planned maintenance activities may be time dependent, such as inspections (column 10 lines 42-49).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to group or align inspection in order to minimize lost production time.

Claims 4-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCasland (U.S. Patent 5,856,931) as modified by Cornett et al. (US Patent 5,216,612) and applied to preceding claims above and further in view of 49 CFR 180.509.

Regarding claim 4, though the references do not expressly teach a visual inspection of the tank shell interior and exterior; piping, valves, fittings and gaskets; brake rigging, safety appliances, draft system, valves and fittings; closures and protective housings on the tank car; and all required markings on the tank car, 49 CFR 180.509 (hereinafter referred to as "Regulation") requires those responsible for maintaining tank cars to ensure continuing qualification and re-inspection of the tank shell interior and exterior; piping, valves, fittings and

gaskets, safety appliances, valves and fittings; closures and protective housings on the tank car; and all required markings on the tank car. Though the Regulation does not specifically address brake rigging and draft system for continuing qualification the Regulation does include the broad requirement to include any system or element that may effect safety and one skilled in the art would have known that faulty brakes or draft system would impair safety.

As for claims 5, Regulation also requires visual inspection of all fillet welds. Though the Regulation does not expressly recite that inspection is required of welds that are greater than 114" and within 4 feet of a bottom longitudinal centerline of the tank car one of ordinary skill in the art would have known where and of what types are at greatest risk of failure.

As for claim 6, Regulation requires the pressure leak testing of all piping in a tank car which obviously includes any heating coils that may be found within the tank car.

As for claim 7, Regulation requires ultrasonic flaw detection on all circumferential butt welds of the tank shell at least within two feet of a bottom longitudinal centerline of the tank car.

As for claim 8, Regulation requires thickness examination of at least one of the tank shell, heads, sumps, and nozzles for each of at least one compartment. Though regulation is not specific about what type of technique should be used to determine material thickness, ultrasonic thickness (UT) determination is perhaps the most widely known method where access to both sides with a single instrument is not possible and one of ordinary skill would have

known to use UT for this purpose. Regulation also does not expressly teach measuring the thickness of manways, however one of ordinary skill would have known that loss of thickness due to corrosion of manway material would jeopardize the safety of anyone walking the manways and that an inspection of the thickness would be in order in view of the Regulation requirement to inspect any element of safety on a tank car.

As for claim 9, Regulation requires inspection of at least one of the thermal protection systems, tank head puncture resistance systems, coupler vertical restraint systems, and systems used to protect discontinuities to ensure integrity. Though the Regulation does not recite which inspection technique should be used, one of ordinary skill at the time the invention was made would have known that visual inspection is the simplest, requiring no specialized equipment but for perhaps a magnifying lens.

As for claim 10, Regulation requires testing the pressure relief device with air to ensure conformance with start-to-discharge pressure requirements. Regulation also requires removing the pressure relief device from the tank car and inspecting for proper thickness. Improper thickness is an indication of corrosion damage. Though regulation is not specific about the use of visual inspection as the inspection method of choice, visual inspection is advantageous for reasons previously stated.

As for claim 11, Regulation requires inspecting the lining if any.

As for claim 12, Regulation requires performing a leakage pressure test of any compartment of a tank and all fittings and openings corresponding to the compartment.

As for claims 13, 14 and 20, Regulation requires inspection of any welds for defects and damage. One of ordinary skill would have known this includes the various types of welds enumerated in the instant invention.

Allowable Subject Matter

Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not disclose or suggest in addition to the limitations of the preceding claims the inspection method also including for a jacketed tank car having a fiber insulation system; creating plural cutout areas in the car jacket corresponding to welds to be inspected; removing all the insulation material from the areas; pushing the insulation away from the entire areas of the welds to be inspected and inspecting the welds using a flexible boroscope.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles D. Garber whose telephone number is (571) 272-2194. The examiner can normally be reached on 6:30 a.m. to 3:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdg

HEZRON WILLIAMS
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